UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,930	07/12/2001	Gerald F. McBrearty	AUS9-2001-0368-US1	1521

7590 11/05/2004

Kelly K. Kordzik
5400 Renaissance Tower
1201 Elm Street
Dallas, TX 75270

EXAMINER	
KIANERSI, MITRA	

ART UNIT	PAPER NUMBER
2145	

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/903,930	MCBREARTY ET AL.	
	Examiner	Art Unit	
	mitra kianersi	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/12/01
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-18 have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff et al. (US Patent No. 6,067,545) above, and further in view of Smith (US Patent No. 5,878,224).

1. As per claim 1, Wolff et al. disclose a method for activating a volume group without a quorum of disks in said volume group being active comprising the steps of:

-sending a first notification of updating data associated with a plurality of disks in a first volume group shared by a first node and a second node; (The network includes a client node, server nodes coupled to the client node and a first and a second resource. Each of the first and the second resources is coupled to a first server node and a second server node respectively. Col 2, lines 66-67 and col 3, lines 1-3) and (this module is the source where internally generated I/O (e.g. from an application on the node itself) enters the processing system. The internal I/O generates a command to command receipt module 142, and sends/receives I/O data through command processing module 154. col 9, lines 21-25)

-receiving a second notification by said second node indicating that said data associated with said plurality of disks in said first volume group has been updated, at a time determined by an update interval field in the cluster node database 120A (see FIG. 5A), it reports its usage to possibly several places depending on the embodiment, including but not limited to, a usage record in the cluster configuration database, a file server, or a load-balance monitor. Further, after each I/O operation, it determines if the current I/O utilization has exceeded the configured load-balance utilization threshold. If so, it conducts a determination depending on the embodiment that results in a message to an aware-client to either redirect I/O for a particular resource to a specific node (See FIGS. 7A-B), or to redirect I/O to any suitable node (See FIGS. 7C-D). col 11, lines 40-57)

wherein said second notification comprises a data identifier; and (at process 1038 a node identifier is written into the lock 120D field (see FIG. 5D) upon successful reservation of the sector in which the lock exists. Col 32, lines 7-9) processing begins by the receipt of an I/O request at command receipt module 142. The I/O request is tagged with the source identifier indicating. Col 16, lines 42-45)
Wolff fails to explicitly teach activating said first volume group by identifying a single disk with valid data out of said plurality of disks in said first volume group based on said data identifier. However, Smith discloses several aspects of the algorithm assuming the server is initially not overloaded; it activates overload controls when the server becomes overloaded. Once controls are active, the measurements that detected an overload may (and should, if the control effectively reduces traffic) indicate that the server is no longer overloaded. However, the demand may still be too high. The algorithm continues to estimate demand as long as controls are active. Otherwise, controls might be removed abruptly, resulting in oscillations in and out of overload. Col 9, lines 18-22)
Therefore, it would have been obvious to one ordinary skill in the art at the time of invention to incorporate Smith system for preventing server overload with Wolff Resource rebalancing in networked computer systems, because the use of a single server for managing files for a resource can also create network problems when the single server crashes and is no longer active on the network. Some networks will lose access to the resource in response to the crash. Other networks include a back up server, which becomes engaged to manage the files previously managed by the crashed server. The backup server may also be subject to crashing. Further, the backup server is required to manage the I/O requests of two servers increasing the opportunity for the backup server to create a bottleneck or crash. What is needed is an improved system and method for distributed processing over a network. Such a system would remove the bottlenecks and disadvantages associated with current distributed networks, while at the same time maintaining its advantages. Such a system would further allow the distribution of processes to function and be managed in a cross platform environment.

2. As per claims 2, 8 and 14, the method wherein said step of activating said first volume group shared by said first and said second node occurs after said first node becomes inoperative, wherein said first node becomes inoperative after sending said second notification. (Upon failure of the administrative server, the disk reader module 150 instructs the server configuration database to be rebalanced by calling the server configuration driver 156. Upon success, the physical I/O translation table is returned from the administrative servers metadata supplier module 162 at which time the disk reader module 150 forwards the physical I/O onto scheduling module 164 for completion. Col 11, lines 7-14, Wolff)

3. As per claims 3, 9 and 15, the method wherein said data is system configuration information. (The server configuration driver uses information obtained from the configuration database 120A-C (see FIGS. 1B, 5B) col 16, lines 49-51, Wolff)

4. As per claims 4, 10 and 16, the method wherein said data identifier is a time stamps. (Fields 1386 are time stamps indicating the last time at which a client received an updated copy of a file directory 1162 [See FIG. 12A]. col 57, lines 8-10, Wolff)

5. As per claims 5, 11 and 17, the method wherein said data identifier is an indication of one or more of said plurality of disks in said first volume group that comprise valid data. the load balancer module 190 accesses the name driver module 194 in response to the redirect command to determine valid alternate paths. Col 20, lines 3-5, Wolff)

6. As per claims 6, 12 and 18, the method wherein said data associated with said plurality of disks in said first volume group is updated if the allocation of said first volume group shared by said first and said second node needs to be changed. allocating the first and the second resources to available ones of the first and the second server nodes on the basis of the weights assigned in said assigning act. Col 3, lines 9-11, Wolff)

7. As per claim 7, Wolff teach a computer program product having computer readable memory having computer program logic recorded thereon for activating a volume group without a quorum of disks in said volume group being active, comprising:
programming operable for receiving a first notification of updating data associated with a plurality of disks in a first volume group shared by a first node and a second node; col 12, lines 66-67, and col 3, lines 1-3 and col 9, lines 21-25)
programming operable for receiving a second notification indicating that said data associated with said plurality of disks in said first volume group has been updated, (col 11, lines 40-57) wherein said second notification comprises a data identifier; (col 32, lines 7-9)
programming operable for activating said first volume group by identifying a single disk with valid data out of said plurality of disks in said first volume group

based on said data identifier. Wolff fails to explicitly teach activating said first volume group by identifying a single disk with valid data out of said plurality of disks in said first volume group based on said data identifier. However, Smith discloses several aspects of the algorithm assuming the server is initially not overloaded; it activates overload controls when the server becomes overloaded. Once controls are active, the measurements that detected an overload may (and should, if the control effectively reduces traffic) indicate that the server is no longer overloaded. However, the demand may still be too high. The algorithm continues to estimate demand as long as controls are active. Otherwise, controls might be removed abruptly, resulting in oscillations in and out of overload. Col 9, lines 18-22)
Therefore, it would have been obvious to one ordinary skill in the art at the time of invention to incorporate Smith system for preventing server overload with Wolff Resource rebalancing in networked computer systems, because the use of a single server for managing files for a resource can also create network problems when the single server crashes and is no longer active on the network. Some networks will lose access to the resource in response to the crash. Other networks include a back up server, which becomes engaged to manage the files previously managed by the crashed server. The backup server may also be subject to crashing. Further, the backup server is required to manage the I/O requests of two servers increasing the opportunity for the backup server to create a bottleneck or crash. What is needed is an improved system and method for distributed processing over a network. Such a system would remove the bottlenecks and disadvantages associated with current distributed networks, while at the same time maintaining its advantages. Such a system would further allow the distribution of processes to function and be managed in a cross platform environment.

8. As per claim 13, Wolff teach a system, comprising: a first node; and a second node coupled to said first node, wherein said second node is configured to take over the functions of said first node if said first node becomes inoperative, wherein said second node comprises:
a processor, a memory unit operable for storing a computer program operable for activating a volume group without a quorum of disks in said volume group being active; an input mechanism; an output mechanism; (Fig.11-B) and (Fig.12-B)
a bus system coupling the processor to the memory unit, input mechanism, and output mechanism, wherein the computer program is operable for performing the following programming steps:
receiving a first notification of updating data associated with a plurality of disks in a first volume group shared by said first node and said second node; (col 2, lines 66-67) and

(col 3, lines 1-3) receiving a second notification indicating that said data associated with said plurality of disks in said first volume group has been updated, col 11, lines 40-57) wherein said second notification comprises a data identifier; and activating said first volume group by identifying a single disk with valid data out of said plurality of disks in said first volume group based on said data identifier. Wolff fails to explicitly teach activating said first volume group by identifying a single disk with valid data out of said plurality of disks in said first volume group based on said data identifier. Col 32, lines 7-9). However, Smith discloses several aspects of the algorithm assuming the server is initially not overloaded; it activates overload controls when the server becomes overloaded. Once controls are active, the measurements that detected an overload may (and should, if the control effectively reduces traffic) indicate that the server is no longer overloaded. However, the demand may still be too high. The algorithm continues to estimate demand as long as controls are active. Otherwise, controls might be removed abruptly, resulting in oscillations in and out of overload. Col 9, lines 18-22) Therefore, it would have been obvious to one ordinary skill in the art at the time of invention to incorporate Smith system for preventing server overload with Wolff Resource rebalancing in networked computer systems, because the use of a single server for managing files for a resource can also create network problems when the single server crashes and is no longer active on the network. Some networks will lose access to the resource in response to the crash. Other networks include a back up server, which becomes engaged to manage the files previously managed by the crashed server. The backup server may also be subject to crashing. Further, the backup server is required to manage the I/O requests of two servers increasing the opportunity for the backup server to create a bottleneck or crash. What is needed is an improved system and method for distributed processing over a network. Such a system would remove the bottlenecks and disadvantages associated with current distributed networks, while at the same time maintaining its advantages. Such a system would further allow the distribution of processes to function and be managed in a cross platform environment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi
Oct/30/2004

William C. Vaughn
Primary Examiner
Art Unit 2143
William C. Vaughn, Jr.